

***IN THE CLAIMS***

Please amend the claims to read as follows:

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1. (Currently Amended) A system for throttling network packets generated from an audio signal, comprising:

an encoder that encodes the audio signal into audio packets;

an interface buffer for storing the audio packets; and

a processor that converts the audio packets into the network packets, and monitors available utilization capacity for at least one of the interface buffer and the processor;

the processor controlling increasing an amount the audio signal that the encoder encodes into the audio packets ~~according to the monitored available utilization capacity when the available utilization capacity indicates high utilization for at least one of the interface buffer or the processor.~~

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2. (Currently Amended) A gateway for throttling network packets generated from an audio signal, comprising:

an encoder that encodes the audio signal into audio packets;

a processor that converts the audio packets into the network packets, the processor controlling increasing an amount of the audio signal that the encoder encodes into the audio packets ~~according to when available utilization capacity of the gateway for converting additional audio packets into network packets drops below a low availability threshold; and~~

a buffer having a free queue that receives the audio packets from the encoder, the available utilization capacity of the gateway varying according to space available in the free queue for receiving the audio packets.

3. (Currently Amended) ~~A gateway according to claim 2. A gateway for throttling network packets generated from an audio signal, comprising:~~

an encoder that encodes the audio signal into audio packets;

a processor that converts the audio packets into the network packets, the processor controlling an amount the audio signal that the encoder encodes into the audio packets according to available utilization capacity of the gateway for converting additional audio packets into network packets; and

a buffer having a free queue that receives the audio packets from the encoder, the available utilization capacity of the gateway varying according to space available in the free queue for receiving the audio packets;

wherein the processor increases an amount of samples of the audio signal the encoder encodes into the audio packets when space available in the free queue falls below a first threshold and decreases the amount of samples of the audio signal the encoder encodes into the audio packets when space available in the free queue rises above a second threshold greater than the first threshold.

4. (Original) A gateway according to claim 3 wherein the space available in the free queue is inversely proportional with a number of network packets in the buffer waiting to be transmitted over an IP network.

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5. (Previously Presented) A system according to claim 1 wherein the utilization capacity varies according to a number of audio signals from incoming calls the system is currently converting into network packets.

6. (Previously Presented) A system according to claim 1 including multiple encoders each encoding audio signals into audio packets for a different incoming call, the processor varying a percentage of the encoders that increase the audio packet size according to the utilization capacity.

7. (Previously Presented) A system according to claim 1 wherein the encoder encodes about 20 milliseconds of the audio signal into the audio packets when the available utilization capacity is greater than a first threshold, encodes about 40 milliseconds of the audio signal into the audio packets when the available utilization capacity falls below the first threshold, and encodes more than 60 milliseconds of the audio signal into the audio packets when the available utilization capacity falls below a second threshold less than the first threshold.

8. (Previously Presented) A system according to claim 1 wherein the audio signal is received over an incoming Public Services Telephone Network (PSTN) call and the network packets are IP packets transferred out over an IP network.

9. (Currently Amended) A method for throttling network packets in a voice gateway, comprising:

encoding an audio signal;

formatting the encoded audio signal into Voice Over Internet Protocol (VoIP) packets

using a central processing unit;  
storing the VoIP packets in an interface buffer;  
monitoring utilization of at least one of the interface buffer and the central processing unit; and  
controlling size of the VoIP packets by varying increasing a number of samples of the encoded audio signal in the VoIP packets according to the monitored utilization when the monitored utilization indicates high interface buffer utilization or high central processing utilization.

10. (Original) A method according to claim 9 including formatting the encoded audio signals using the central processing unit and varying the VoIP packet size according an amount of processing capacity of the central processing unit used for formatting the encoded audio signal into VoIP packets.

11. (Original) A method according to claim 10 including:  
storing the VoIP packets in the interface buffer before transmitting the VoIP packets over a VoIP network;  
monitoring the interface buffer by determining an amount of free space in the interface buffer currently not storing VoIP packets; and  
controlling the VoIP packet size according to the amount of free space currently in the interface buffer.

12. (Original) A method according to claim 11 including periodically monitoring the amount of free space in the interface buffer and the available processing capacity of the central processing unit and controlling the VoIP packet size according to that periodic monitoring.

13. (Currently Amended) ~~A method according to claim 11 including~~ ~~A method for throttling network packets in a voice gateway, comprising:~~

using multiple digital signal processors to encode multiple audio signals at the same time;

~~formatting the encoded audio signal into Voice Over Internet Protocol (VoIP) packets using a central processing unit;~~

~~storing the VoIP packets in an interface buffer;~~

~~monitoring utilization of at least one of the interface buffer and the central processing unit; and~~

~~varying a percentage of the digital signal processors that increase the VoIP packet size according to the amount of free space in the interface buffer and an amount of processing capacity of the central processing unit used for switching the encoded audio signal to the IP network monitored utilization.~~

14. (Currently Amended) A method according to claim 9 ~~wherein formatting the encoded audio signal into VoIP packets includes the following:~~ 13 including:

~~attaching an Internet Protocol header to the encoded audio signal;~~

~~attaching a User Datagram Protocol (UDP) header to the encoded audio signal; and~~

~~attaching a Realtime Transport Protocol (RTP) header to the encoded audio signal~~

~~varying a percentage of the digital signal processors that increase the VoIP packet size according to the amount of free space in the interface buffer and an amount of processing capacity of the central processing unit used for switching the encoded audio signal to the IP network.~~

15. (Currently Amended) ~~A method according to claim 9 including~~ A method for throttling network packets in a voice gateway, comprising:

encoding an audio signal;

formatting the encoded audio signal into Voice Over Internet Protocol (VoIP) packets using a central processing unit;

storing the VoIP packets in an interface buffer;

monitoring utilization of at least one of the interface buffer and the central processing unit;

controlling size of the VoIP packets by varying a number of samples of the encoded audio signal in the VoIP packets according to the monitored utilization; and

increasing a number of samples of the audio signal in the VoIP packets when utilization in the interface buffer is above a first threshold and lowering the number of

~~samples of the audio signal samples in the VoIP packets when utilization in the interface buffer drops below a second threshold lower than the first threshold.~~

16. (Currently Amended) A computer program for use with a network processing device, said computer program, comprising:

~~a processor load monitor that monitors utilization of a processor in the network processing device;~~

~~a buffer load monitor that monitors utilization of an interface buffer that buffers audio packets in the network processing device; and~~

~~a throttle indicator that generates a throttle value according to the monitored processor utilization and monitored interface buffer utilization, the throttle value used by the network processing device to vary increase an amount of an audio signal that is encoded into the audio packets when the monitored utilization indicates heavy processor utilization.~~

~~17. (Currently Amended) A computer program according to claim 16 A computer program for use with a network processing device, said computer program, comprising:~~

~~a processor load monitor that monitors utilization of a processor in the network processing device;~~

~~a throttle indicator that generates a throttle value according to the monitored processor utilization, the throttle value used by the network processing device to vary an amount of an audio signal that is encoded into the audio packets; and~~

~~wherein size of the audio packets are throttled in a percentage of multiple digital signal processors wherein the percentage is proportional to the throttle value.~~

~~18. (Currently Amended) A computer program according to claim 16 A computer program for use with a network processing device, said computer program, comprising:~~

~~a processor load monitor that monitors utilization of a processor in the network processing device;~~

~~a throttle indicator that generates a throttle value according to the monitored processor utilization, the throttle value used by the network processing device to vary an amount of an audio signal that is encoded into the audio packets; and~~

~~wherein a number of samples of the audio signal encoded into the audio packets is increased when the monitored processor utilization reaches a first processor utilization threshold or the monitored interface buffer utilization reaches a first buffer threshold.~~

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19. (Original) A computer program according to claim 18 wherein the number of samples of the audio signal encoded in the audio packets is decreased when the monitored processor utilization drops below a second processor utilization threshold lower than the first processor utilization threshold and the monitored interface buffer utilization drops below a second buffer threshold lower than the first buffer threshold.

20. (Currently Amended) A system for throttling network packets in a voice gateway, comprising:

means for encoding an audio signal;  
means for formatting the encoded audio signal into Voice over Internet Protocol (VoIP) packets using a central processing unit;  
means for storing the VoIP packets in an interface buffer;  
means for monitoring utilization of at least one of the interface buffer and the central processing unit; and  
means for controlling size of the VoIP packets by varying increasing a number of samples of the encoded audio signal in the VoIP packets according to when the monitored utilization indicates high utilization of at least one of the interface buffer and the central processing unit.

21. (Previously Presented) A system according to claim 20 including means for formatting the encoded audio signals using the central processing unit and varying the VoIP packet size according an amount of processing capacity of the central processing unit used for formatting the encoded audio signal into VoIP packets.

22. (Previously Presented) A system according to claim 21 including:  
means for storing the VoIP packets in the interface buffer before transmitting the VoIP packets over a VoIP network;

means for monitoring the interface buffer by determining an amount of free space in the interface buffer currently not storing VoIP packets; and

means for controlling the VoIP packet size according to the amount of free space currently in the interface buffer.

~~23. (Previously Presented) A system according to claim 22 including means for periodically monitoring the amount of free space in the interface buffer and the available processing capacity of the central processing unit and controlling the VoIP packet size according to that periodic monitoring.~~

~~24. (Currently Amended) A system according to claim 22 including~~ A system for throttling network packets in a voice gateway, comprising:

means for encoding an audio signal;

means for formatting the encoded audio signal into Voice over Internet Protocol

(VoIP) packets using a central processing unit;

means for storing the VoIP packets in an interface buffer;

means for monitoring utilization of at least one of the interface buffer and the central processing unit;

means for controlling size of the VoIP packets by varying a number of samples of the encoded audio signal in the VoIP packets according to the monitored utilization;

means for formatting the encoded audio signals using the central processing unit and varying the VoIP packet size according an amount of processing capacity of the central processing unit used for formatting the encoded audio signal into VoIP packets;

means for storing the VoIP packets in the interface buffer before transmitting the VoIP packets over a VoIP network;

means for monitoring the interface buffer by determining an amount of free space in the interface buffer currently not storing VoIP packets;

means for controlling the VoIP packet size according to the amount of free space currently in the interface buffer; and

means for using multiple digital signal processors to encode multiple audio signals at the same time and varying a percentage of the digital signal processors that increase the VoIP packet size according to the amount of free space in the interface buffer and an amount of processing capacity of the central processing unit used for switching the encoded audio signal to the IP network.

~~25. (Previously Presented) A system according to claim 20 including:~~

~~means for attaching an Internet Protocol header to the encoded audio signal;~~

~~means for attaching a User Datagram Protocol (UDP) header to the encoded audio signal; and~~

~~means for attaching a Realtime Transport Protocol (RTP) header to the encoded audio signal.~~

~~26. (Previously Presented) A system according to claim 20 including means for increasing a number of samples of the audio signal in the VoIP packets when utilization in the interface buffer is above a first threshold and lowering the number of samples of the audio signal samples in the VoIP packets when utilization in the interface buffer drops below a second threshold lower than the first threshold.~~

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